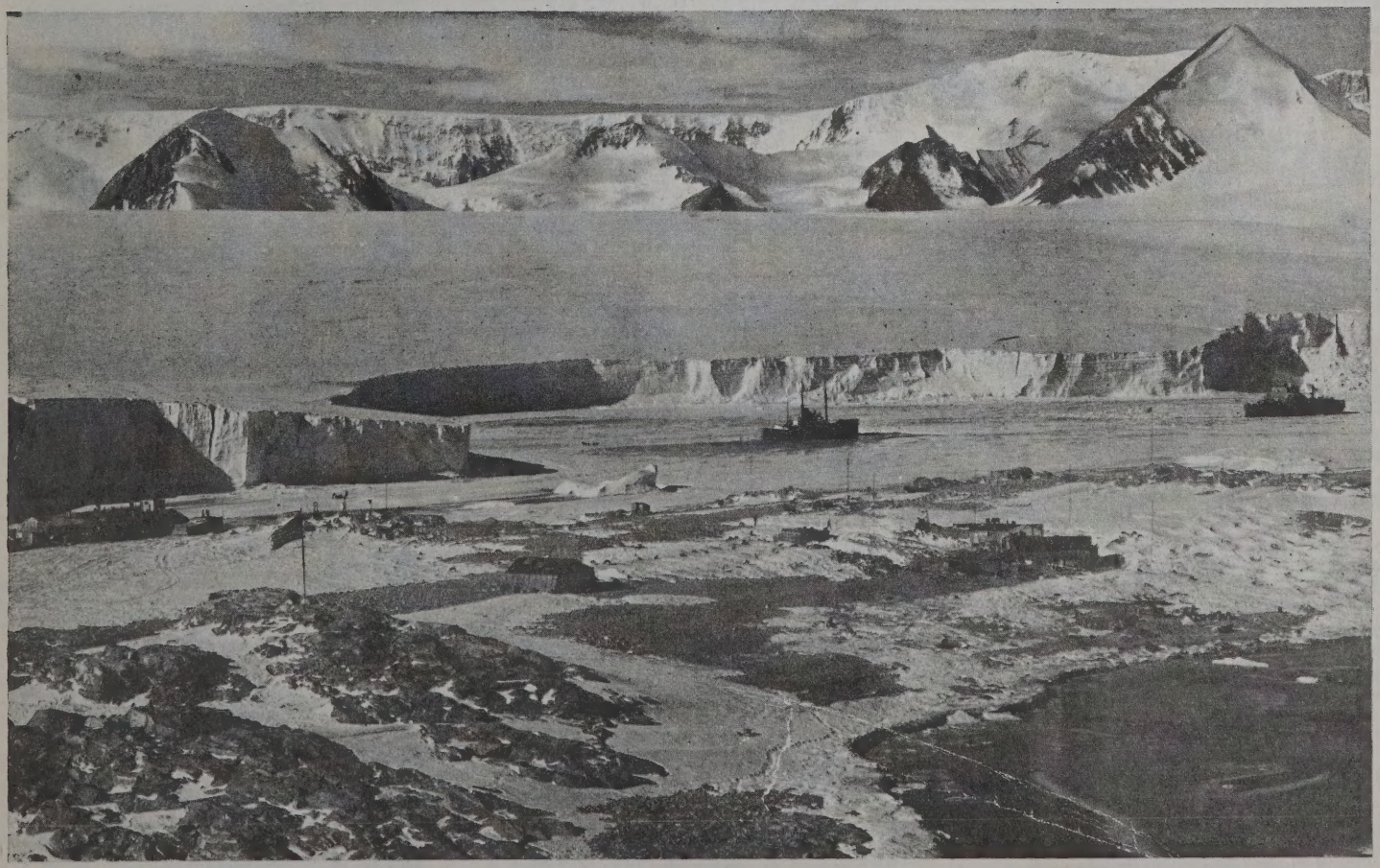
THE POLAR TIMES



Official U. S. Navy Photograph

MARGUERITE BAY, PALMER PENINSULA

Researchers ponder Eskimo future

by Brenda Stephens
The Anchorage Times

Researchers who have studied the effects of Prudhoe Bay oil development on the North Slope Eskimo are now looking one step further — what happens once the oil starts to decline?

"The question is not only whether the government is functioning well, but what the future is for a region so dependent on oil," explained Gerald McBeath, a political science professor at the University of Alaska, Fairbanks.

Unless new oil and gas resources are developed by the late 1990s, he said, the costs of the government and social programs created with today's oil revenues will represent "an increasing part of a shrinking borough budget."

McBeath is the author of a report which looks at how the North Slope Eskimos, known as Inupiats, have pulled together to draw benefits from North Slope oil development. That shared effort, McBeath wrote, is something ethnic minorities in other energy-rich areas of the United States have rarely achieved.

It was accomplished by the Inupiats through formation of the North Slope Borough, followed by the birth of government and policymaking among a once nomadic people, the report said.

McBeath's report is the third in a series for the "Man-in-the Arctic Program," funded by the National Science Foundation. Part three analyzes both the development of the North Slope Borough government and its effectiveness in bringing social and economic improvements to the Inupiats.

The report said that using oil revenues, the North Slope Borough has embarked on a major capital improvement program, building clinics, modern housing units, new schools.

In addition to social improvements, the construction projects brought jobs to the area. By mid-1980, the regional unemployment rate had dropped to 5 percent, compared with 11 percent statewide and nearly 50 percent in some rural areas.

The sparsely populated North Slope boasted 500 new housing units and a new school in each village. In less than a decade, the region had gone from one of the poorest in the United States to one of the richest.

Before contact with white whalers and traders, the report said, the Inupiat traveled in family groups, following the animals they hunted, and living in temporary, scattered dwellings built partly underground.

The arrival of white men in the early 1850s brought permanent settlements, better hunting weapons and the introduction of a cash economy. But government and political organization were alien concepts which drew little response from the Inupiat.

It wasn't until a 1966 dispute over the state's selection of potentially oil-rich North Slope lands that a permanent organization — the Arctic North Slope Native Association — was formed. It began to fill the region's political void.

Inupiats claimed title to the lands in question according to aboriginal right. They formed the association to assert that right.

The land claims movement started as a fight for material needs — land to live and hunt on. But as ties between the Inupiat tightened, leaders also began to look at social and political needs — jobs, schools, housing.

They demanded regional government as a means to deal with those needs.

The North Slope Borough was incorporated as a first class borough in 1972. Its basic structure was established within 18 months, despite court challenges by oil companies against including the Prudhoe Bay reserve in the borough. The state Supreme Court dismissed the case in January 1974.

"An important effect of the company challenge was that it put the borough in a combative mood," said McBeath.

He quoted a borough adviser who said: "We are the only borough that had to be approved by the Supreme Court."

While the borough has fought for protection of such native traditions as subsistence lifestyles, it has also brought change by "spreading the western educational system and pursuing socioeconomomic development," he added.

The future is unclear, McBeath said. Job opportunities created by more construction of capital improvement projects will continue through 1985, but are not guaranteed beyond that.

He pointed out, however, "I was very impressed with the energy of the borough and its leadership, with the way people who previously had not worked together in a regional government institution did come together and work effectively."

Science council urges arctic research increase

State and federal governments should increase the amount of research in the arctic region, the Alaska Council on Science and Technology has urged.

The council has approved a resolution asking the state and federal governments to develop appropriate science policies for arctic research.

The council also has urged that the state pay for an arctic research vessel capable of working in icy waters.

T. Neil Davis, chairman of the council, said the U.S. is the only nation with northern interests that doesn't have a research vessel capable of arctic operation. Norway has nine vessels, Canada has eight and the Soviet Union has 20, Davis said.

He also said the federal government has devoted an inordinate amount of research effort to the antarctic region at the expense of arctic research. He said the antarctic region doesn't have resident people or hold much promise in the fields of energy, fisheries or other resource development.

"The arctic waters of Alaska offer the nation the potentials of energy self sufficiency, balance of trade monetary assistance and an enhanced defense position," Davis said.

The Polar Times

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AUGUST HOWARD, Editor

THE POLAR TIMES highly recommends "The Polar Record," published by the Scott Polar Research Institute, Cambridge, England.

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Huge sealift set for Prudhoe

TACOMA (AP)—Workers at the Port of Tacoma are preparing a summer sealift of super-sized cargo to Alaska's North Slope.

Three 10-story structures containing tons of pipes, valves and tanks are being readied for shipping next month.

The giant modules pump natural gas back into the ground after the gas is separated from oil coming from the Prudhoe Bay field.

The gas needs to be reinjected to maintain the natural pressure in the field and to store the gas until a proposed trans-Canada gas line is built to the U.S. Midwest.

The three massive modules are among 24 sizable pieces of equipment assembled at the port to be floated north to Alaska this summer.

"These modules are bigger than anything we've built before," said Gerard Stolz, resident manager for the builder, Parsons Constructors Inc., under contract with Atlantic Richfield Co.

Several barges are being strengthened to handle the super-sized structures.

May 15

One of the Coast Guard's many missions is providing the United States with a presence in the Arctic and Antarctic. The lonely duty falls to the seamen who man icebreakers on long patrols to the North and South poles.

Every summer, when the polar ice thaws slightly, icebreakers smash their way into scientific and military bases, clearing the way for the delivery of supplies and the testing of scientific devices. The ships also conduct logistics exercises for the Defense Department.

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The Polar Times

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No. 92 *JUNE 1981*

Use of Haul Road by All Traffic Stirs Alaska

By WALLACE TURNER
The New York Times

YUKON CROSSING, Alaska, June 7 — It could be a back-country gravel road anywhere. This is the Dalton Highway, the haul road that opened up some of the most remote areas of North America to automobile traffic.

It crosses formidable barriers to highway construction, one after another, as it runs 416 miles from Livengood, a mining village, across the mountains to span the Yukon River. It climbs the treacherous slopes to the Continental Divide at Atigun Pass in the Brooks Range. Coming down, it follows the Sagavanirktok River to Deadhorse, gateway to the oil fields at Prudhoe Bay.

The Alyeska Pipeline Company had to build the road before it could build the pipeline, and when the highway opened in 1974, traffic was limited beyond the Yukon to vehicles involved in the pipeline construction. Later, traffic was restricted by permits to about 200 trucks a day carrying supplies to the oil camps built by the petroleum companies on the frozen Arctic plain.

At midnight May 31, after four years of disputes among several interests, a stretch 150 miles north of the Yukon was opened to all traffic.

No more than 25 vehicles exercised the new privilege in the first week the road was open, by the estimate of Patty Christiansen, a highway department employee, who hands out leaflets to those about to set off up the highway with the warning: "Feeding animals is dangerous. Violators will be prosecuted."

A clamor over opening the road began when the state took control of it on completion of the pipeline in 1977. Sportsmen wanted access to remote fishing and hunting areas. Business interests thought opening it might help the state's economy. Miners wanted to get to their claims.

But truckers believed tourists would create traffic hazards. Indians and Eskimos wanted to keep people out of their hunting areas, believing that whites who shoot for trophies and not for the meat would deplete the game. Safety-conscious officials worried about tourists coming onto the highway, unfamiliar with the country, and ill-equipped to look after themselves.

"I resisted it being thrown wide open," said Gov. Jay Hammond. "I wanted it opened in stages." That was what a Superior Court judge in Fairbanks ordered done in late winter.

The road will be open to all traffic until Sept. 1 as far as Disaster Creek. In this 150-mile stretch there are no food, shelter or communication facilities. There are only eight places to turn off the road, which is an elevated gravel pad without shoulders.

The New York Times / June 10, 1981

In dry weather trucks throw up thick clouds of dust, and in the rain, mud gobs. In all times, they kick up rocks that shatter windshields, side windows and headlamps. Car rental agencies require customers to sign forms that make it clear the agencies expect never to see their equipment in working order again.

Ken Mendes, operator of the garage here, charges $5 a mile and $95 an hour for towing. Gasoline is $1.98 a gallon.

The newly opened stretch ends 36 miles south of the Continental Divide and 205 miles from the oil fields at Prudhoe Bay.

For another year at least, the remote areas beyond will remain the exclusive domain of the truckers, such as John Foley, who paused at the south end of the Yukon River bridge to adjust his air brakes before pulling the trailer onto the sloping wooden decking.

This trip began in Anchorage. Nine hours and 358 miles later, he was in Fairbanks. Fifteen miles out and headed north, he stopped at the only truck stop north of Fairbanks for a breakfast of steak and eggs.

Senate Approves Pact to Permit Killing of 30,000 Alaska Fur Seals

WASHINGTON, June 11 (AP) — The Senate today ratified an agreement allowing the killing of about 30,000 Alaskan seals a year, but it required a study aimed at reducing the kill.

By a vote of 94 to 0, the Senate ratified a protocol extending for four more years agreements by the United States, the Soviet Union, Canada and Japan on annual kill quotas for the seals.

In a compromise, it added by voice vote an understanding that studies be conducted on the impact of changing the quotas and on alternate jobs for Aleut seal hunters if the kill were reduced.

The Senate Foreign Relations Committee had rejected a proposal by Senator Carl Levin, Democrat of Michigan, that would have prohibited any further killing of the United States share of the seals.

The conservation agreement prohibits Japan and Canada from killing the seals on the high seas but in return provides them with 15 percent each of the seal kills on United States and Soviet islands.

U.S. Drops Investigation Of Alaskan Eskimo Whalers

ANCHORAGE, April 18 (AP) — The Justice Department says it is dropping an investigation of possible violations by Eskimo whalers of quotas set on endangered bowhead whales by the International Whaling Commission.

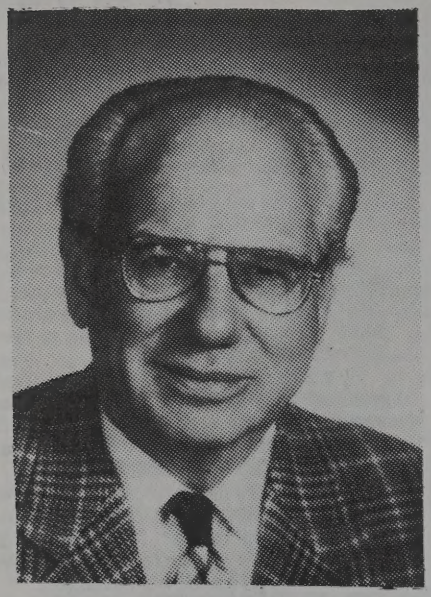
In a statement released yesterday by the United States Attorney's office here, the Justice Department said the decision to halt the grand jury investigation followed the "spirit of cooperation" reflected in an agreement signed last month by the National Oceanic and Atmospheric Administration and the Alaska Eskimo Whaling Commission.

The two-year agreement gives the Eskimos much of the responsibility for enforcing quotas and conducting the whale census on which the quotas are based.

The grand jury investigation began last October. Four whaling captains and an employee of the whaling commission were subpoenaed, but no indictments were handed down.

The Russians and the Japanese have been experimenting for years with the harvesting of krill to be converted into animal and human food. The Russians reportedly take an annual haul of 100 million tons, more than the total sea catch. The krill are especially abundant in Arctic waters where they are taken by fishing vessels.

UAF to honor arctic geologist



ALBERT L. WASHBURN

A noted geologist and educator will speak at the University of Alaska-Fairbanks commencement this spring and receive an honorary doctorate at the same time.

Albert Lincoln Washburn, a researcher into Arctic regions throughout his entire life, will be honored in recognition of his persistent efforts to establish funding for permafrost research.

A friend and colleague, UAF geology and geophysics professor Carl Benson, described Washburn as an outstanding choice for commencement speaker. "I have been repeatedly impressed by his totally unselfish commitment to serving his profession over so many years. He does not 'sound his own horn'," Benson said.

Now a professor emeritus of the University of Washington, Washburn's interest in Alaska dates back to the 1930s when he was a member of the 1934 Memorial Harvard-Dartmouth Mount Crillion Expedition and the National Geographic's 1936 Mount McKinley Expedition. That same year he was a member of the U.S. Olympic Ski Team.

He has taught at Dartmouth, Yale, McGill and Washington universities. He also has served as the executive director of the Arctic Institute of North America and the U.S. Snow, Ice and Permafrost Research Establishment, now known as the Cold Regions Research and Engineering Laboratory.

Washburn was responsible for establishing the Quaternary Research Center at UW in Seattle. He recently retired as director, but is still chairman of the Polar Research Board of the National Academy of Sciences.

In that position, Washburn directs research devoted to Alaska's problems from resource recovery and socio-economics to snow, ice and permafrost hazards and pollution protection.

He has written more than 50 books and papers on cold regions. He is also the recipient of the Geological Society of America's Kirk Bryan Award and the Medaile Andre H. Dumont of the Geological Society of Belgium.

Commencement ceremonies will be May 10.

Polar researcher and educator Albert Lincoln Washburn delivered the commencement address, noting a need for increased Arctic research and urging students to aid in meeting tomorrow's problems.

Daily News-Miner, Fairbanks

Skiers abandon North Pole try

Associated Press March 9

Resolute Bay, Northwest Territories — An Anglican priest who wanted to be the first explorer to conquer the North Pole on cross-country skis has returned from the tundra after only two days on the Arctic ice.

But the Rev. Laurie Dexter says it was lack of money — not lack of stamina — that forced him to abandon his four-man expedition.

Dexter said the expedition simply couldn't afford to forge ahead after the $10,000 airlift of an ill team member.

Due to that unexpected expense, "we couldn't have afforded to be picked up (at the pole)," said Dexter.

He said the trip had cost the four men about $40,000 and most of their personal savings.

So the 35-year-old minister was back to preaching Sunday at his tiny Anglican Church in this Eskimo town.

"I still think we could have made it," he said.

Bruce Ladebu, 25, an outdoors instructor from Titusville, Pa., was reported in satisfactory condition Sunday in Stanton Yellowknife Hospital.

Ladebu was slightly frostbitten, but hospital officials and expedition members have not disclosed the nature of his ailment.

Dexter, Rob Kelly, 32, of Banff, Alberta, Peter Charkiw, 28, of Edmonton and Ladebu left Ward Hunt Island on March 2 for the 470-mile journey to the North Pole.

The expedition began near Point Columbia on Ellesmere Island, the northernmost point in Canada's Arctic archipelago.

The four wanted to plant the first Canadian flag at the pole and be the first to make the journey without dog teams, air support or motorized equipment.

On cross-country skis, pulling sleds loaded with supplies for 70 days, the men had planned to follow the route taken by Admiral Robert Peary and Matthew Henson. Radio and a sophisticated satellite locater system would have kept them in contact with civilization.

Dexter has spent 10 years in the Canadian north. The others have extensive expeience in long-distance travel and mountain climbing.

However, Ladebu became ill the day after the group left Ward Hunt Island and after a further day of travel they were forced to halt for three days.

They built an igloo to keep warm before being picked up by a Twin-Otter aircraft and taken to Resolute Bay.

Expedition members would not disclose details of those few days spent on ice because of a contract with the Toronto Star Syndicate, which purchased exclusive rights to the story.

But Dexter said the three remaining members of the expedition could have continued the journey if they had received more financial backing.

UAF scientists get grant for aurora study

Two Alaskan scientists have received a $149,000 National Science Foundation grant to continue daytime auroral studies at Svalbard Island, in the Arctic Ocean north of Norway.

The grant went to Professors C.S. Deehr and G.G. Sivjee of the University of Alaska's Geophysical Institute.

Svalbard Island is the only land region in the northern hemisphere where the daytime aurora is visible during the winter darkness in December and January.

Deehr and Sivjee are among scientists from several countries studying the relationship between the daytime aurora over Svalbard and the nighttime aurora observed simultaneously from Alaska and Canada.

Letter Recalls Lost Chapter in Arctic Exploration

By THEODORE SHABAD

Almost exactly a century ago, on Sept. 29, 1881, the U.S.S. Rodgers anchored at Herald Island, a rocky bit of Arctic land off northeast Siberia, and sent a landing party ashore.

The Rodgers was a strongly built, 420-ton New Bedford whaling ship, originally named Mary and Helen, that had been purchased by the Navy for $100,000 and dispatched to this area near the Bering Strait by President Rutherford B. Hayes. Its mission was to look for possible survivors from two missing American whalers and from the Jeannette, a naval vessel that had not been heard from since 1879 in her attempt to reach the North Pole.

An inspection of the barren, three-mile-long island yielded no trace, but the landing party left a penciled message on a sheet of thick paper, 10 by 16 inches, telling of the ship's plans for the approaching seven-month-long Arctic winter. The paper was folded into a four-sided whisky bottle and placed under a cairn.

Asking the finder to "please transmit the contents of this bottle to the U.S. Navy Department, Washington, D.C.," the note said in part: "The Rodgers leaves here in search of winter quarters on the Siberian coast and will continue the search next season."

It was signed by two of the ship's officers, Ens. Henry J. Hunt and Charles F. Putnam, who had the naval rank of master, equivalent to the present-day lieutenant junior grade.

Bottle Undetected for 73 Years

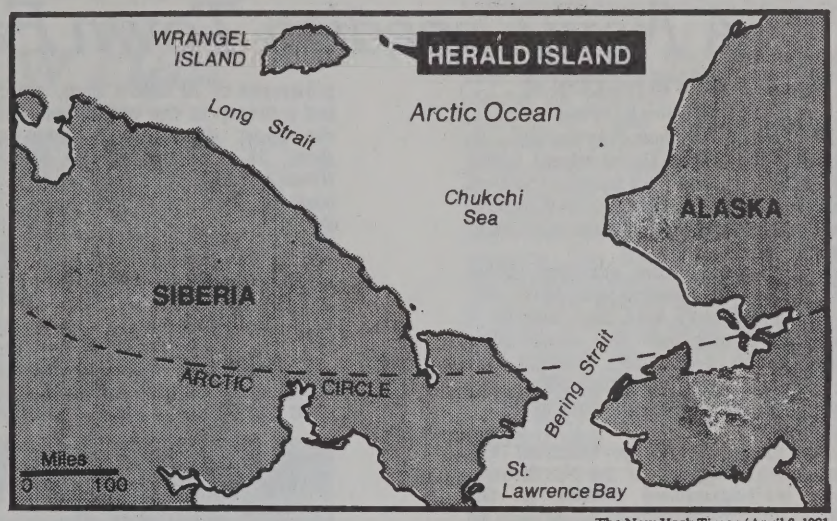
For 73 years, the bottle message under the pile of stones on uninhabited Herald Island remained undetected, and many more years were to pass until its story would finally come to light, reopening a little-known chapter in the history of Arctic exploration.

It was a time when routine visits by United States whalers and other ships during the brief summer season made virtually American waters of the area around Herald Island and the much larger Wrangel Island, 40 miles to the west, in what is now closely guarded Soviet territory.

Czarist control was tenuous and, as Russia became embroiled in World War I, revolution and civil war, there was much "wrangling over Wrangel Island," as one historical account later put it. Claims were advanced on behalf of Britain, Canada and the United States, before a Soviet gunboat, in 1924, asserted possession that was not further challenged.

It was not until 30 years later, in 1954, that a shore party from the Soviet survey ship Donets happened upon the Americans' cache on Herald Island while picking up rocks to build a stone marker of their own. The whisky bottle had been chipped, the paper was covered with mold or had crumbled away, and the writing had become badly faded.

The Russian surveyors took the find back to their home base in Leningrad, where it was filed away with their trip report in the archives of the Soviet Hydrographic Office. Seventeen more years passed before it was finally noticed. It was restored as far as possible in a chemical laboratory, photographed on infrared film and ultimately published last year in a journal of the Soviet Geographical Society in Leningrad.



The New York Times / April 6, 1981

Russians on Herald Island found penciled U.S. note after 73 years

A translation of the Soviet report has now been prepared for publication in the United States, together with the English text of the Rodgers message, insofar as it could be made out by the Soviet restorers. The material is to appear in the spring issue of Polar Geography, a quarterly journal published by Scripta Technica Inc., Silver Spring, Md., with the sponsorship of the American Geographical Society of New York.

The journal is also publishing a background article on the Rodgers voyage, based on the files of The New York Times. The expedition was front-page news in 1881-82, and The Times, together with its rival, The New York Herald, printed detailed reports about it, including the texts of messages sent to the Navy Department by Lieut. Robert M. Berry, the ship's captain.

The reconstruction was prepared by the associate editor of Polar Geography, William Barr of the University of Saskatchewan in Saskatoon, who is an authority on the history of the Northern Sea Route off Siberia.

Search for Survivors Unsuccessful

Reached by telephone, Professor Barr said in an interview that although the Rodgers and the Corwin, another search ship, never found the survivors of the missing Jeannette, the activities of the two vessels "were of considerable importance from a purely geographical standpoint."

"The crew of the Corwin made the first known landing on Wrangel Island," Dr. Barr said. "The crew of the Rodgers, in searching for survivors, made the first determination of the size and shape of the island. Previously it was thought to extend indefinitely northward."

Names on Soviet maps still commemorate the Rodgers expedition. Wrangel Island's principal anchorage, sheltered behind a spit of land, is called Rodgers Harbor. The island's east cape, Cape Waring, is named for Master Howard S. Waring, the ship's second in command. The name of Lieutenant Berry is still being used for a geological formation on the island. Wrangel Island is named for a Russian naval officer who spotted the island in 1823, and Herald Island for a British Navy ship that first sighted it in 1849.

Dr. Barr recalled the disasters that befell both the Rodgers and the Jeannette.

The Rodgers, after leaving Herald Island in late September 1881, found a winter anchorage in St. Lawrence Bay, on the Bering Strait, where she caught fire and sank on Nov. 30, without loss of life. Members of the crew were billeted with local Chukchis, Siberian natives, until they were picked up the following May by the Corwin and returned to the United States.

Only one member of the crew, Master Putnam, who was one of the signers of the Herald Island note, did not make it home. During the winter, while on dog-sled trip along the coast, he became lost in a blizzard and strayed onto shore ice. The ice was torn loose by the storm, and he drifted out to sea, not to be seen again.

The hulks of the two missing American whalers, the Vigilant and the Mount Wollaston, were reported to have been seen by Siberian natives; there were no survivors.

As for the Jeannette, it was later learned that she had become trapped in pack ice and had drifted for two years until she was crushed and sank in June 1881. The crew escaped with most of the ship's provisions and three small boats, trying to make their way across ice and open stretches of water to the Siberian mainland, 600 miles away.

After a harrowing trek of two months, most of the men reached land in the Lena River delta, but some of them, including the captain, Lieut. Comdr. George Washington De Long, then died of exposure and starvation.

In Brief, Pallid Summers of Arctic Circle, A New Canadian Town Fails to Take Root

By ANDREW H. MALCOLM
The New York Times

INUVIK, Northwest Territories — In 1955 the Canadian Government spent $50 million to construct Inuvik, the first community north of the Arctic Circle to provide the normal facilities of a Canadian town.

Scraped out of the scrubby forest that ends at the treeline near here, Inuvik (ih-NEW-vik) was designed as a base for development and administration of much of Canada's western Arctic and as a center to bring education, medical care and new opportunities to the area.

Like much of what government officials have designed for the North from their well-appointed offices in the South, Inuvik remains in large part an artificial community. It has brought dial telephones, improved medical care, pizzas, satellite television and ice-cube machines to the North.

But many of the Indians and Inuit, formerly called Eskimos, ushered into town as new residents have drifted back to native communities sprinkled about this vast river delta country. Officials are trying to find some nongovernmental economic base for Inuvik, whose name means "place of man" in Inuktitut, the language of Canada's Northern peoples.

Boredom Encourages Vandalism

But grafting this new community onto the Arctic is proving as difficult as having the plants in four civic flower boxes take root; what the cold nights and long winters do not kill, vandals rip up, likely out of sheer boredom.

"There really isn't much to do here," says Bob Veres, the hospital dietician, "unless you're an outdoorsman and you don't mind mosquitoes and you like very long winters."

The winters last for around eight months with long stretches of total darkness when the library's borrowing rate jumps dramatically. "And we tend to sleep a lot, just like the animals," said Jo Ashdowne, the librarian.

The winter regularly brings temperatures of 30 below zero, which can put a crimp in the enthusiasm of even the most determined cross-country skier. It also freezes the Mackenzie River, Canada's largest and probably least-known river. The freeze is so solid and deep that the government opens, and routinely snowplows, ice roads all over the frozen delta, including one 80-odd miles north to Tuktoyaktuk on the Beaufort Sea.

Prices Rise in Winter

Winter, when nights last all day, also brings income from fur-trapping lines, even greater increases in food prices,

The New York Times / Sept. 9, 1980

including $2.17 for a dozen eggs, and a strong sense of irritation, depression and confinement that adds to the alcoholism problem as well as long passenger lists on flights to the outside.

Fall and spring are the shortest seasons. One day the river is frozen, the next it is flushed clear of ice. Frost is a regular visitor after mid-August. Summer, when days last all night, is something to savor, especially for the mosquitoes.

"There's just so much to do in the summer," says Mrs. Ashdowne, who was busily handing out Arctic Circle crossing certificates to tourists flying here for a brief taste of the North.

Canada also has a military base here, a not-so-secret radio monitoring facility. After the government, tourism is probably the largest single economic factor. A thorough tour of town, whose population is 2,900, can be completed in an hour or so, providing glimpses of husky dogs on chains, snowmobiles snoozing in the midnight sun, a lot of dust and the ubiquitous "utilidors," small insulated metal tunnels, laid above ground to avoid melting of the permafrost, and connecting every building with utilities.

Hoping for Share of Oil Bonanza

But a new area of economic interest is under consideration by city officials, including Mayor Cynthia Hill, a native of Lincoln, Mass., who brought her New England accent and family up here 17 years ago. "Inuvik," she said, "would be anxious to participate in and enjoy any of the economic spinoff from the Beaufort action."

She spoke of the broadening undersea search for oil and gas in the Beaufort Sea just to the north. There, at the end of the Mackenzie River Delta, drill ships have made encouraging discoveries. So far, however, Tuktoyaktuk has been the major beneficiary.

Inuvik had a short-lived boom in the early 1970's until talk of a natural-gas pipeline across the fragile Arctic area was shelved indefinitely. Jobs are a problem. "Not all who want to be trained or employed can be," the Mayor said.

More growth is expected now with the recent completion of the Dempster Highway, Inuvik's first year-round land link with southern Canada. But if new arrivals follow past patterns, they will come with some concern about isolation, fall in love with the beauty of the Arctic, the wilderness and the new experiences, and then in three or four years move out, somewhat tired.

"There is something special about the North," says Mayor Hill. "Maybe it's that frontier feeling people have of being kinder to each other here out of necessity. You're glad to see someone no matter who it is."

Arctic Research Proposed

Canada and Norway should establish research cooperation on the Arctic areas as soon as possible. Several attempts to include the Soviet Union in this have not succeeded and there is no need to wait for them any longer. This was the conclusion reached at a seminar in Oslo concerned with the possibilities for closer cooperation on research in the light of the growing importance of these areas.

Professor *Trevor Lloyd* from Canada believed that there should be a broad cooperation between all the countries that border on these areas or have interests in the Arctic and he especially desired cooperation between Canada and the Scandinavian countries.

News of Norway

Agreement on Jan Mayen in Sight

A Norwegian/Icelandic/US mediation board has put forward a recommendation that Iceland is to have a 200 mile shelf zone in he direction of Jan Mayen at the expense of parts of Norway's 200 mile zone around the island. At the same time, Norway and Iceland are to establish a partnership to exploit possible oil resources in the entire shelf area. Norway will have a right to 25 per cent of possible oil, gas or mineral finds on the Icelandic part of the Jan Mayen shelf, while Iceland will have the same percentage share on the substantially bigger Norwegian part.

News of Norway

Biggest Meteorite Is Star Of Museum's New Hall

By MALCOLM W. BROWNE

The New York Times / May 1, 1981

It was the birth of the solar system 4.6 billion years ago that launched their space voyages, and it was chance encounter that shot their fiery spoors through the skies of Earth. But it was the backbreaking labor of a good many human beings that brought their remnants to rest at the Arthur Ross Hall of Meteorites, a new exhibition that opened yesterday at the American Museum of Natural History.

The star of the new permanent exhibition is the 34-ton Ahnighito meteorite — the biggest meteorite ever pulled out of the ground. No stranger to New Yorkers, it had been at the Hayden Planetarium since 1935, when the planetarium was built around it to accommodate its immense mass. But the Ahnighito had reposed in the dim shadows of a darkened planetarium corridor, and generations of visitors sensed its presence as much by touch as sight. By dint of a considerable engineering project, the big lump of iron has been moved three blocks south into the museum proper.

Now ablaze with light and mounted under a large ceiling mirror that makes the circular Ross Hall seem domed, the Ahnighito is supported on six steel legs, each about two feet high. They are actually the tops of pylons driven through the floors of the museum into the bedrock of Manhattan Island — the only support strong enough to support the staggering load.

Dr. Martin Prinz, curator of the museum's meteorite collection, watched this week as workmen stripped a coat of grimed, khaki-colored paint from the Ahnighito. It had been applied to the meteorite decades ago for some long forgotten reason.

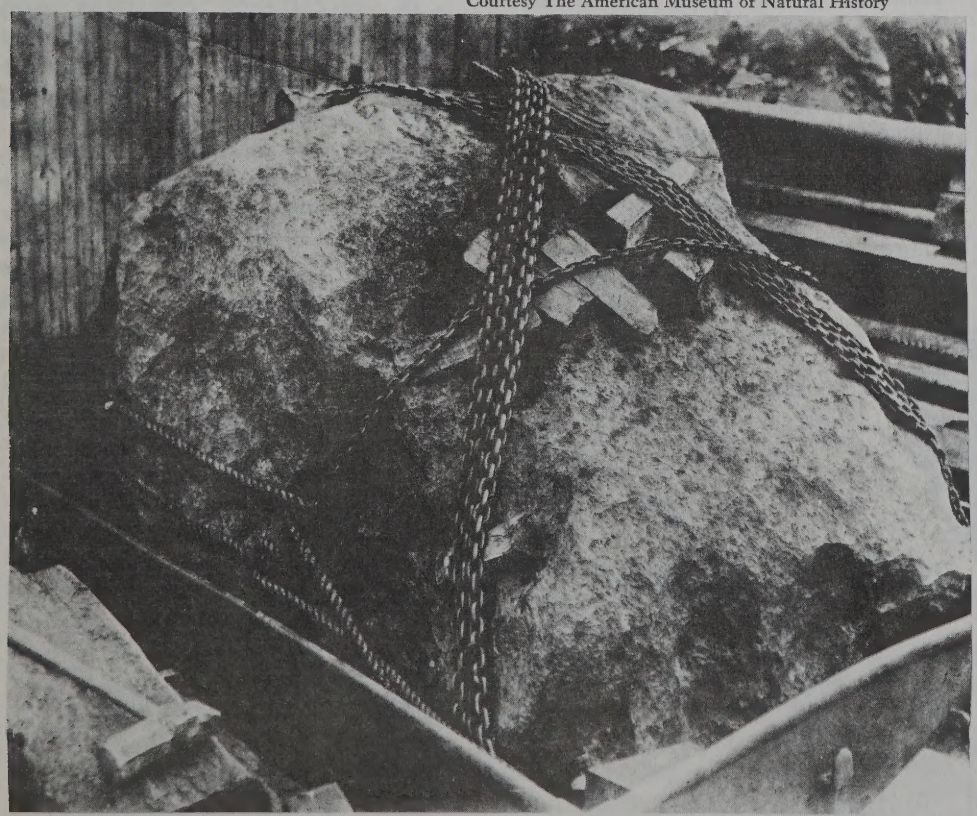
A Longtime Acquaintance

"I've been looking at the Ahnighito for much of my adult life," Dr. Prinz said, "but since we've lighted it up in the new hall, I've noticed things I never saw before. Look at the shadows and highlights along its side. Now you can make out its pattern of big iron-nickel crystals — something you normally see only when you cut a slice off a meteorite with a diamond saw, and polish and etch the exposed surface. By the way, that crosshatching of octagonal crystals, which we call the Wildmanstätten pattern, is something you find only in meteorites. It forms only when molten metal is cooled very slowly — about 10 degrees every million years.

"This meteorite was once part of the core of a planet that broke up as the solar system was forming, but which had a chance to cool before disintegrating."

Old prints and photographs have been mounted around the Ahnighito depicting its colorful terrestrial past, starting at Cape York, Greenland, where it fell 10,000 years ago. Eskimos needing iron for tools and weapons used rocks to hack slivers from the Ahnighito (which means tent) and two smaller meteorites, both also on exhibit at the museum. The Eskimos revealed the site of their prized meteoritic iron supply to Adm. Robert E. Peary in 1894, and after a series of dangerous and difficult expeditions, the admiral had the meteorites excavated. They arrived by sailing ship at the Brooklyn Navy Yard in 1897 and were sold to the museum for $40,000 in 1906.

Courtesy The American Museum of Natural History

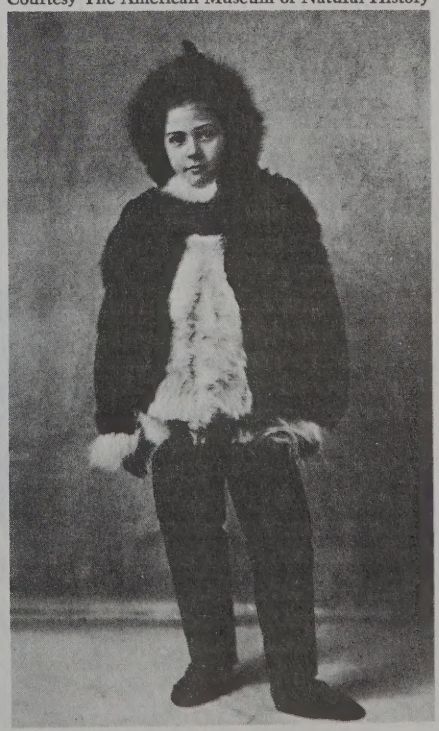


The 34-ton meteorite *Ahnighito* is positioned over the hold of Peary's ship.

Q. *In warm climates there are large numbers of plant and animal species, but relatively small numbers of individuals. In Arctic climates there are few species, but large numbers of individuals. Why?*

A. In the Arctic region, the harsh climate limits the number of species that can survive. There is less competition for the available food, so a species that has adapted to the rigorous environment can easily expand. In the tropics, there is a longer growing season and fewer weather fluctuations. There are also many different niches in which different species develop, but the competition for food and space is more intense.

Courtesy The American Museum of Natural History



Peary's daughter, born in Greenland, formally christened the rock *Ahnighito*.

A Lode of Meteorites

Antarctica has been found to be an exceptional storehouse of these extraterrestrial objects

by Brian Mason

NATURAL HISTORY
Vol. 90, No. 4, April 1981
American Museum of Natural History

Conventional wisdom would predict that meteorites falling in Antarctica would soon be buried in the ice that covers almost the entire continent and never reappear, except perhaps in the moraines exposed in a few coastal areas. And the chance of recognizing the odd meteorite in the mass of rock debris in a moraine is small indeed.

Prior to 1969, only four meteorites had in fact been found on the whole continent of Antarctica. But in 1969 a Japanese expedition picked up nine meteorites in a small area on the icecap near the Yamato Mountains, in the African sector of Antarctica. When that news was first reported, scientists thought that the find might represent a single meteorite that had broken into several pieces during or after its fall. However, mineralogical examination showed that several different meteorite types were present, representing several distinct falls. The results of that examination have been amply confirmed by additional searches in the same region, in 1973, 1974, 1975–76, and 1979–80, that have yielded more than 3,000 specimens in all.

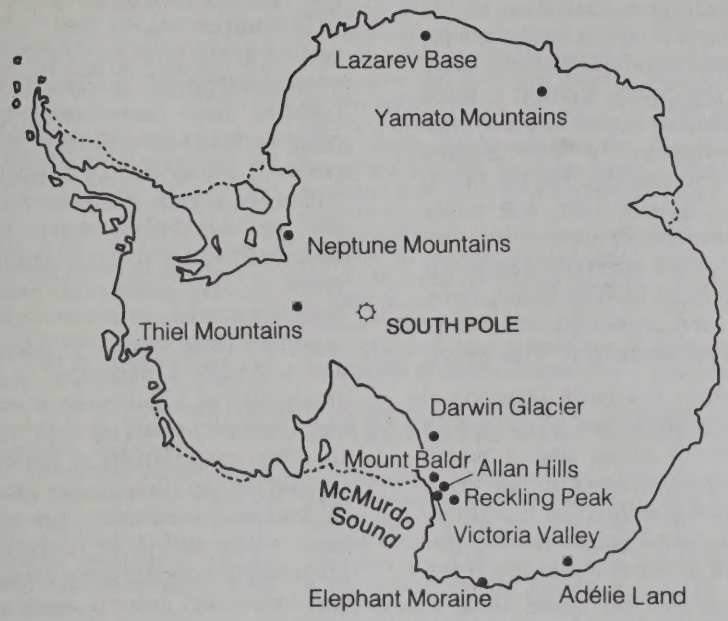
The early work on the Yamato meteorites was reported at a meeting of the Meteoritical Society in Davos, Switzerland, in August 1973. William A. Cassidy of the University of Pittsburgh, a scientist with long experience in the search for meteorites, who attended that meeting, was immediately struck by the evidence for some concentrating mechanism—a process that would explain the occurrence of several different meteorite types in a small area—and deduced that special conditions unique to the Antarctic icecap must be responsible. He concluded that similar conditions should exist elsewhere in Antarctica. The success of subsequent expeditions led by Cassidy to areas other than the Yamato Mountains has clearly demonstrated the validity of his thesis.

Statistics on meteorite falls are imperfect, since falls are unpredictable and many go unobserved. However, extrapolation from observations in densely populated regions indicate an average meteorite infall of one per million square kilometers per year, or about 500 a year for the entire planet. Since the oceans cover about 70 percent of the earth's surface, only about 150 meteorites a year fall on land and can be recovered. Because much of the earth is sparsely populated and recovery is difficult in forested or rocky terrain, the recovery rate is only about ten per year. Statistically, over a period of a million years, there should be one meteorite in each square kilometer. But in the Antarctic, areas of concentration, containing many more meteorites than statistically predicted, are found. The Antarctic icecap evidently functions as a collecting and concentrating medium.

What peculiar features of the Antarctic continent produce these unique concentrations of meteorites? The icecap has existed for millions of years —possibly since the Miocene, some twenty million years ago. Meteorites have fallen on the icecap throughout this period and have been buried in the ice, which moves slowly toward the coast. Much of the ice eventually reaches the coast and either melts or drifts away in the form of icebergs. In some places, however, the ice flow is blocked by mountain ranges. The ice stagnates and is slowly removed by ablation, that is, by evaporation and wind erosion, but is constantly replaced by newer ice from the interior. Solid objects within the ice, the meteorites for example, will remain on the surface and accumulate as a unique form of "lag gravel." It should be realized that much of Antarctica is essentially a dry desert, in which ablation greatly exceeds the accumulation of new snow.

Brian Mason is curator of the Department of Mineral Sciences at the Smithsonian Institution in Washington, D.C. Born in New Zealand, he took his Ph.D. in mineralogy halfway across the world at the University of Stockholm. His interest in meteorites dates from his days as a graduate student and has caused him to concentrate on that subject for the past twenty-five years. Before going to the Smithsonian in 1965, Mason was chairman of the Department of Mineralogy at the American Museum.

Sites of Antarctic Meteorite Finds



Expedition	Date	Area Investigated	Meteorites Found
Mawson (Australian)	1912	Adélie Land	1
Lazarev (Russian)	1961	Lazarev Base	1
U.S. Geological Survey	1962	Thiel Mountains	1
	1964	Neptune Mountains	1
Japanese	1969	Yamato Mountains	9
	1973		12
	1974		663
	1975-76		307
	1979-80		Approx. 3000
Joint United States-Japanese	1976	Mount Baldr	2
	1977	Allan Hills	9
	1977-78		307
	1978-79	Darwin Glacier	47
		Allan Hills	267
New Zealand	1978-79	Reckling Peak	5
		Darwin Glacier	6
United States	1978	Purgatory Peak	1
	1979-80	Allan Hills	54
		Reckling Peak	15
		Elephant Moraine	11

This scenario accounts for the areas of meteorite concentration in association with mountain ranges that block the flow of the inland ice. If the Antarctic icecap has existed for twenty million years, there is the possibility of recovering meteorites that have fallen over a very long period of time. (Meteorites falling in temperate and tropical areas are likely to disappear within a few thousand years because of weathering, erosion, or burial.) The Antarctic meteorites fell into the equivalent of a "deep freeze" and have thus been preserved with a minimum of terrestrial alteration and contamination. Given this unique concentration of meteorites, there is a good chance of finding rare or previously undescribed meteorite types.

How long have the Antarctic meteorites been on the earth? What are their terrestrial ages? Conceivably we may expect any age from the present back to the time of inception of the icecap, perhaps twenty million years ago. Meteorites carry within them a time clock in the form of radioactive isotopes produced by cosmic-ray bombardment in outer space. When meteorites land on the earth, this cosmic-ray bombardment is effectively terminated, and the induced radioactivity decays as a function of time. Approximate terrestrial ages have been measured for twenty-seven Antarctic meteorites, and the calculations range up to 700,000 years. This range includes the oldest terrestrial ages ever measured on stony meteorites.

The old terrestrial ages of the Antarctic meteorites have introduced a new and exciting possibility, that of using meteorites as time probes. Measurement of radioactivity induced by cosmic rays should make it possible to span a range of terrestrial ages extending back twenty million years to the time of the inception of the Antarctic icecap. The concentrations of meteorites now being found near the margins of the icecap may well yield specimens old enough to provide critical information on the formation, expansion, and flow directions of the great mass of ice blanketing the Antarctic continent.

One of the unanswered questions that has troubled meteoriticists is whether the meteorites collected and described over the past two centuries are representative of the total influx of meteorites. Are there meteorite types that have escaped recognition and collection? Has the range of meteorite types changed during geologic time? The Antarctic meteorites provide some clues to answering these questions.

The specimens so far classified from the Antarctic collections are: 87 percent chondrites; 5 percent achondrites; 7 percent irons; and 1 percent stony irons. These percentages agree remarkably well with those for all recorded meteorite falls. For the 809 confirmed falls recorded worldwide up to 1977 these percentages pertain: 85 percent chondrites; 8 percent achondrites; 6 percent irons; and 1 percent stony irons. Thus the Antarctic collections appear to be a representative sampling of the terrestrial meteorite influx. A point of interest is that iron meteorites are present in their statistical proportion. It might be expected

that because of the great difference in density between nickel-iron and ice, irons would sink to the bottom of the icecap, never to resurface.

Because of their pristine condition and scientific value, Antarctic meteorites are handled with the same care that is given to lunar rocks. Beginning with the 1977–78 field season, the following procedures have been followed. After being photographed in place, the meteorites are wrapped in Teflon bags, sealed with tape, and packed in sterile, padded metal boxes provided by the Johnson Space Center in Houston. The boxes are flown to McMurdo Station and then shipped refrigerated to the Space Center, where they are unpacked and the meteorites are placed in a cold storage room at –40°C. Each bag, containing one or more meteorites, is transferred from the storage room to the processing laboratory, where every meteorite is compared to its field photograph to confirm its identity. Each meteorite is then rephotographed (usually from several angles) and weighed; its external features are described; a chip is taken for thin sectioning and petrographic description; and a permanent number is assigned. Once they have been documented, the meteorites are sent to researchers according to the procedures previously established for lunar rocks. As soon as possible after receipt at the Space Center, a piece of each meteorite is sent to the Smithsonian Institution in Washington, where I am responsible for the initial description, classification, and publication of the descriptions.

Meteorites are normally named for the geographical feature (town, river, mountain, and so forth) nearest to their place of discovery. This procedure, however, is clearly impractical for large concentrations of meteorites found in small areas, and a name-and-number combination has been adopted. This combination is a three-letter abbreviation for the locality (for example, ALH for Allan Hills); a letter for the field party (A for the first party, B for the second, and so on); two digits for the year of the field season (77 for the 1977–78 season); and a three-digit number that identifies the individual specimen. Thus specimens collected by the first field party at Allan Hills during the 1977–78 season are numbered from ALHA77001 through ALHA77307.

Meteorites have been aptly described as the poor man's space probes —extraterrestrial materials arriving cost-free from outer space and carrying within them a history, albeit imperfectly preserved and difficult to decipher, of events in the universe over the past five billion years. The discovery of the Antarctic meteorites provided a large supply of unique research materials at a propitious time —when a large number of laboratories and scientists experienced in the investigation of lunar rocks were ready and anxious to extend their research to other extraterrestrial material. A fruitful cooperation among specialists in Antarctic meteorites, specialists in lunar rocks, and those studying other planetary bodies has been established, and concurrent investigations of these materials are providing comparative studies of wide-ranging importance for our comprehension of the origin and evolution of the solar system. □

Largest School of Sea Animals Found, Tracked in Antarctic

By Philip J. Hilts *March 24*
Washington Post Staff Writer

The largest school of sea animals ever found was being tracked off the Antarctica last week. It took up several square miles of sea, to a maximum depth of 600 feet below the cold surface.

The enormous school was made up of a shrimp-like animal called krill, and the single school was equal to about one-seventh of the world's total fish and shellfish catch for a year. The school found last week would be enough to supply every man, woman and child in the nation with 98 pounds of the crustacean.

"We have never, anytime, anywhere, seen anything remotely like this size for one school of animals," said Francis Williamson, chief polar scientist for the National Science Foundation.

"People had been talking about taking as much as 10 million metric tons a year, as a total world catch, in the future," Williamson said. "This one school of animals is 10 million tons." He said the find makes credible the notion that krill could be a major percentage of the world's fishing in the future.

Krill, a protein-rich animal that grows to a maximum length of about two inches, has begun to be fished by half a dozen nations in pilot projects.

It has been suggested that the animal be mashed and used for such products as animal meal, a new variety of hot dog, a paste for cracker spread or potato chip dip, or simply added to many foods as a cheap way to increase their protein and bulk.

The swarm of krill was spotted near Elephant Island in the Antarctic by the research ship *Melville*.

Hampered by high winds, fog, and icebergs, the ship got the aid of two West German ships and a Polish one to measure the school with sonar and netting techniques.

Some 35 Soviet fishing trawlers gathered at the site of the massive school as the measurements continued.

3 Britons finish Antarctic trek

Christchurch, New Zealand (UPI)— The skirl of bagpipes, a hot bath and a good meal welcomed three British adventurers to an Antarctic base yesterday at the end of their record 66-day, 2,600-mile snowmobile crossing of the frozen continent.

Expedition leader Sir Ranulph Fiennes, 36; Charles Burton, 39; and Oliver Shepard, 36, arrived at New Zealand's Scott Base at McMurdo Sound after driving across the Ross Ice Shelf—only the second crossing of the frozen wasteland.

Their first request was for a "good meal and a bath"—Antarctic luxuries and their first since leaving the American South Pole base Dec. 23.

Fiennes' wife, Lady Virginia, welcomed the men, who used small motorized toboggans to chug across the snowy terrain. They now plan to tackle the Arctic icecap in their bid to be the first to circle the world across both poles. They expect to be back in England by the summer of 1982.

THE ONLY PREVIOUS Antarctic crossing was by British explorer Sir Vjvian Fuchs and Sir Edmund Hillary, a New Zealander who was the first Westerner to climb Mount Everest. In 1957-58, they took 99 days to travel 2,250 miles in snow caterpillars before reaching Scott Base. Jan. 12

Slowly the sea level is rising

The Boston Globe

Your socks may not be wet just yet, but recent evidence suggests that the sea level is creeping up faster now, perhaps the first sign that human activity is changing the whole world's climate.

The data are sketchy, and much more research needs to be done, but if Kenneth O. Emery's calculations are right, the rate at which sea level is rising is accelerating.

If that is true, it may be caused by the West Antarctic ice sheet beginning to thaw, releasing a huge amount of water into the seas. If the ice sheet were to melt completely, the result could be a 16-foot rise in average sea level, which would, of course, be severe on coastal cities such as New York, Boston, New Orleans and San Francisco.

So far, changes in sea level have, admittedly, been rather slow, on the order of less than .4 inch a year. But this still represents a significant increase compared to the past 5,000-year average of only 1 millimeter a year.

Emery, a geologist at the Woods Hole Oceanographic Institution near Boston, says his detailed studies of tide gauge readings from all around the world indicate the rate of sea level rise has changed significantly in just the past 10 to 15 years.

"In fact," Emery says, "an examination of recent measurements indicates a possible acceleration in the rate of sea level rise."

During the past 5,000 years, he explained, the average rate of sea-level rise has been calculated to be about 1 millimeter a year. "This low long-term rate, however, appears to have at least doubled during the few decades spanned by most tide-gauge measurements of the world, as though due to recently increased melting of glaciers or to increased subsidence of land, which is less likely."

Such a change in the rate of sea-level rise may indicate that the increasing amount of carbon dioxide flowing into earth's atmosphere is causing a worldwide warming of the air, Emery says. If it gets warm enough, parts of the polar icecaps could begin melting, generally raising sea levels.

The accumulation of excess carbon dioxide in the air results in what some scientists have called a "greenhouse effect," meaning the carbon dioxide tends to trap heat energy that would ordinarily be radiated back into space. It has long been known that human activities—especially the burning of coal, oil and gas—tend to increase the amount of carbon dioxide in the air.

Emery notes, however, that much uncertainty exists about what the effects of increased carbon dioxide might be. Even though an increase in temperature is predicted, in the past 20 years worldwide temperatures have been declining slightly. At the same time, it's not yet known whether the plant life on earth, which absorbs and uses carbon dioxide, might somehow limit or control how much carbon dioxide stays in the air.

"Measurements indicate a slow increase in carbon dioxide from about 290 parts per million [in air] in 1860 to 335 parts per million at present," Emery says. It also has been estimated that a doubling of the amount of carbon dioxide in air "may occur within about 50 years at the present rate of increase in its production.

"This doubling would produce a warming at the poles of the earth of 6 to 8 degrees (Celsius), enough to cause rapid melting of the unstable West Antarctica ice sheet and a corresponding rise in sea level.

"Topographic evidence indicates," Emery says, "that this ice sheet may already be breaking up, and evidence exists for previous fluctuations in its size and thickness."

It means, Emery adds, that more attention should be paid to monitoring the rise in sea level, since the warnings have been clear "and it shouldn't catch us by surprise." /11

Hubbs-Sea World photo

In San Diego, a newborn emperor penguin chick ventures out from under its father's protective abdominal fold, in the antarctic penguin facility at Hubbs-Sea World Research Institute.

Antarctic memorial

MARY ALICE McWhinney, an Antarctic researcher from De Paul University who died last year, has been honored by having a science center in Antarctica named for her, according to the National Science Foundation, which operates United States programs at the South Pole.

"Her loss is felt keenly in the U.S. and international science communities," said A.F. Betzel, NSF Ocean Projects Manager. "To all who came into personal contact with Mary Alice, there is a deep personal loss for a warm and gifted human being."

The Mary Alice McWhinney Marine Science Center is at the Palmer Station in Antarctica, where she conducted much of her research. She was considered the world's leading expert on the krill, a small shrimp-like creature that abounds in Antarctic waters. Fishing boats from several nations are harvesting the protein-rich krill.

McWhinney, who had been chairman of De Paul's Biological Sciences Department, in 1962 became the first woman scientist from the U.S. to conduct research in Antarctica.

Expert on Eskimo culture dies

COPENHAGEN, Denmark (AP)—Retired professor Erik Holtved, among the world's formost experts on Eskimo culture, died today at age 81.

Holtved began his career as an assistant to Danish explorer Knud Rasmussen in 1931 on Rasmussen"s sixth expedition to Thule, Greenland.

Holtved was a professor of the Greenlandic language and Eskimo culture at Copenhagen University from 1951 until his retirement in 1968.

Most of Holtved's research was in Greenland, including a three-year period in Thule in the 1930s.

His published works included "Polar Eskimos," 1942; "The Evolution of Eskimo Myths," 1943; "The Polar Eskimos, Language and Folklore," 1951; and "Contributions to Polar Eskimo Ethnography," 1967. May 28

The entrance to the geodesic dome that covers the main complex of buildings at Amundsen-Scott South Pole Station.

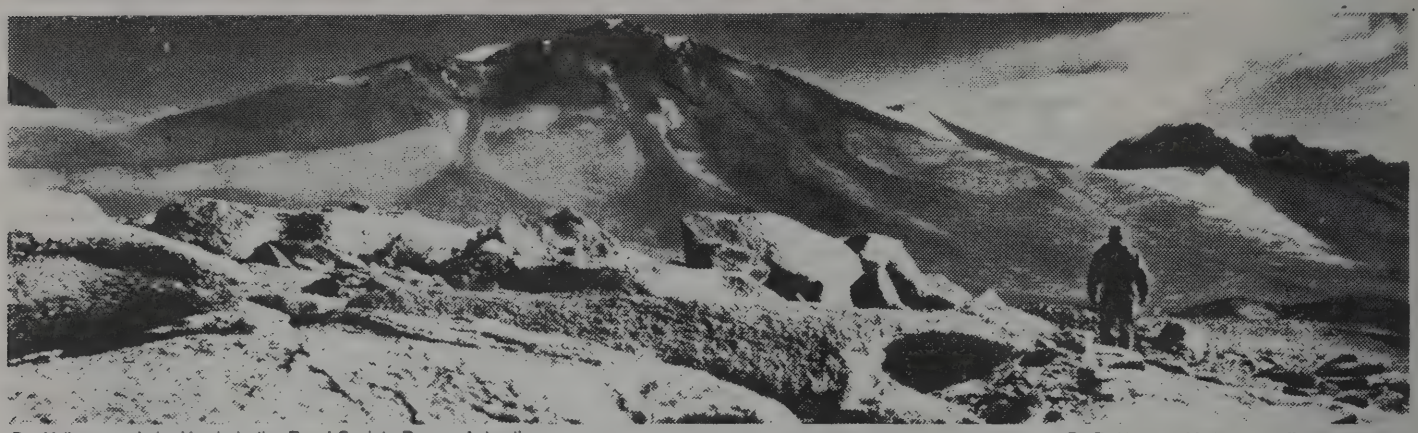
Penguin chicks hatched at San Diego

The first emperor penguin chick to have been bred and hatched outside of the antarctic continent made its way into the world on 16 September 1980 at Hubbs-Sea World Research Institute antarctic penguin facility in San Diego. Later that week two more chicks were hatched at the same Sea World penguin facility. Sea World maintains a colony of 45 emperor penguins, brought from the McMurdo Sound area. Scientists at the San Diego facility hope to build a self-sustaining colony of these penguins to study year round.

In their natural habitat, emperor penguins breed in the winter when temperatures reach as low as -60°C, on the sea ice surrounding Antarctica. Scientists at Sea World have come close to replicating these conditions. The building which houses the emperor colony and a colony of Adélie penguins is kept well below freezing and is supplied with large quantities of flaked ice daily. The lighting system duplicates the light and dark of the austral summer and winter. During a 3- to 4-month cycle, emperor penguins mate, lay, and incubate the eggs. After the egg is laid the female transfers it to the male who cares for it for 2 months while the female returns to the sea to feed. Sea World duplicated this part of the cycle by placing the females in another part of the facility during incubation and returning them after the chicks were hatched. Since each parent shares in caring for the chick after hatching, researchers also have found it necessary to allow only one parent at a time with each of the three chicks to prevent confusion.

Sea World scientists have successfully raised over 100 Adélie chicks in the past four years. With the birth of the three emperor chicks, they hope to begin a similar trend in the emperor colony. The adverse conditions in which emperors breed have made the prospect of studying their development extremely difficult. A colony maintained at a research facility like Sea World will offer scientists a way to learn more about some aspects of the biology of these birds than they can in the emperor's natural habitat.

This fall the American Association of Zoological Parks and Aquariums presented the Edward H. Bean award for zoology to Sea World for the Institute's antarctic pengiun project. The award, the highest one given by the Association, is made in recognition of management and husbandry of captive birds, mammals, and fish.



Dry Valley near Lake Vanda in the Royal Society Range, Antarctica

By R. Norman Matheny, staff photographer

German scientists head south for the 'summer' — all the way to the bottom of the world

W. Germany packs up for Antarctica

Team to set up nation's first permanent research station

By Elizabeth Pond
The Christian Science Monitor

Bonn

West Germany is celebrating the new year of 1981 in a very special way: It is taking a giant step toward joining the 13-member — perhaps soon to be 14-member Antarctic Club. A team of about 40 scientists and technicians is to land any day now on the shelf ice in the Weddell Sea to man West Germany's first permanent Antarctic research station.

With this move West Germany is resuming the polar research that pre-war Germany excelled at. World War II interrupted a major German Schwabenland expedition in 1938-39. And in the first decades of the century German geologist and explorer Alfred Wegener — whom the new research station will be named after — was the father of the currently favored theory of continental drift.

The Wegener Station — along with West Germany's newly established Polar Research Institute at Bremerhaven and the polar research vessel now projected for completion by the end of 1982 — should entitle Bonn to graduate from nonvoting to voting status as a 1978 signatory of the 1959 Antarctic Treaty.

Exactly when this recognition might come, however, depends on acceptance of the West German research as "permanent" by the current voting members of the Antarctic Club: the American and Soviet superpowers, the Antarctic neighbors of Argentina, Chile, South Africa, Australia, and New Zealand, and the traditional polar explorer, Norway, as well Japan, Belgium, France, Great Britain, and Poland.

At the new Wegener Station — which is located 20 kilometers (12 miles) inland at 77 degrees south and 50 degrees west on a sheet of ice the size of Sweden and an estimated 500 meters thick — the researchers will measure and analyze the dynamics of ice building and melting.

They are arriving in the summer; temperatures have now warmed up to minus 30 degrees F., and the huge ice floes that wreathe the "sixth continent" in winter are sufficiently dispersed for the Norwegian chartered ship Polarsirkel to get through to the edge of the shelf ice. They will stay until the end of February, and five technicians will stay on to monitor instruments over the south polar winter.

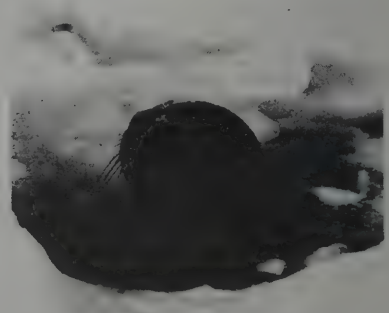
While there, the researchers will live and work in two connected underground pipes 50 meters long and eight meters in diameter, buried two meters in the snow. This station is on a glacier that is moving toward the sea, but it should survive for eight years before breaking off of the shelf ice.

The measurements of the Wegener Station will be supplemented by ice readings made by mobile teams, and also by oceanographic explorations. The aim of the latter is to map the distribution of Arctic birds as well as to record basic data for the seabed, and for seals, fish and krill.

Next summer a West German expedition intends to look at the effect of the south polar region on world climate and the circulation of Antarctic water masses and air, to measure the earth's magnetic field, and to make astronomical observations in the clear polar atmosphere.

From all the detailed findings West German scientists would like to begin formulation of an integrated concept of the complex interrelationships of sea, ice, and atmosphere, and of the whole biological and physical environment. They would like to form hypotheses as well about the geological history of the Antarctic.

In the Ross Sea, a killer whale swims along the ice edge while penguins gather on the ice. The Convention on the Conservation of Marine Living Resources emphasizes the need to learn more about the interdependence of all species in the antarctic marine ecosystem.



A Weddell seal emerges from McMurdo Sound near Hutton Cliffs on Ross Island.

Narrative Recalls Deadly Attack by Whale in 1820

The New York Times

NANTUCKET, Mass. — The sinking of the whaler Essex by a sperm whale that struck head-on, forcing the 20-man crew to take to the sea in lifeboats, is dramatically recalled in a narrative, lost for a century, that was found recently.

Only eight of the shipwrecked sailors survived. Five drifted at sea for more than 90 days, living off salvaged bread, fish and the flesh of crewmen who died of natural causes or were killed after drawing lots.

The Essex, out of Nantucket, sank midway across the Pacific on Nov. 20, 1820. For years the only record of the voyage was an account written the next year by the first mate, Owen Chase. Chase's narrative inspired the description of the climactic attack by Moby Dick on the whaler Pequod in Herman Melville's classic novel.

A second account was written in 1880 by Thomas Nickerson, who was 17 years old and at the ship's helm when the whale struck. The location of the Nickerson account was unknown until the manuscript was found by Ann W. Finch of Hamden, Conn., in her attic in December and donated to the Nantucket Historical Association.

The narrative, about 80 handwritten pages, has been authenticated by Edouard Stackpole, a historian and expert on whaling who is curator of the association's Peter Foulger Museum.

Nickerson gave this account of the whale's attack: "I then being at the helm and looking on the windward side of the ship, saw a very large whale approaching us. I called out to the mate to inform him of it. On his seeing the whale he instantly gave me an order to put the helm hard up and steer toward the boats.

"I had scarcely time to obey the orders when I heard a loud cry from several voices at once that the whale was coming foul of the ship.

"Scarcely had the sound of their voices reached my ears when it was followed by a tremendous crack. The whale had struck the ship with his head directly under the larboard forechains at the water's edge with such force as to shock every man upon his feet.

"A second blow followed. The ship began to sink."

The crew grabbed food and supplies, including nails, knives and pistols, and abandoned ship, according to the account.

Seven crewmen were in each of two open whaleboats, with six in a third. They headed for South America after Capt. George Pollard reckoned that they could reach the continent's west coast, about 2,000 miles away.

After a month the men sighted Henderson's Island, where three decided to remain. The others filled their flasks with fresh spring water, caught fish to dry and eat and sailed on.

One boat was apparently lost at sea. Two weeks later, on Jan. 12, the two remaining boats were separated by a storm. Nickerson and Chase were in one boat, with three other crew members. On Jan. 18, one of the survivors, Richard Peterson, died and was left at sea. Another, Isaac Cole, went mad and died Feb. 8. The Chase account says the dead seamen's limbs were taken for food.

On Feb. 17 the boat was sighted by the Indian, a whaler out of London, and the three were rescued.

The other boat was sighted Feb. 23 by the whale ship Dauphin of Nantucket. Two men, Captain Pollard and Charles Ramsdell, were rescued. The three men on Henderson's Island were picked up by a ship two months later.

Canadians Withdraw From Whaling Commission

OTTAWA, June 27 (Reuters) — Canada announced last night that it had withdrawn from the International Whaling Commission because of a lack of "any direct interest in the whaling industry or in the related activities of the commission." Canada outlawed commercial whaling in 1972.

The Whale Project, a lobbying coalition representing 30 environmental groups, protested the withdrawal, which it called "a regrettable abdication of responsibility for the survival of the world's whale population."

Government officials said in a statement that Canada would continue to back international work for whale conservation. The withdrawal, presented to the commission yesterday, is to take effect next year.

Planning of Alaska Land Use Starts

By SETH S. KING

The New York Times

ANCHORAGE — In the upper left-hand corner of the Bureau of Land Management's large-scale map of Alaska is a vast blank space marked "National Petroleum Reserve, Alaska."

Within all of its 23 million acres, an area about the size of Illinois, are four Eskimo villages, a caribou herd, the moulting grounds for several species of birds and some oil exploration crews from the United States Geological Survey.

This roadless, treeless wildnerness of tundra and permafrost above the Arctic Circle was the principal area of development activity in Alaska recently as the Reagan Administration began to carry out the provisions of the Alaska Lands Act and a companion act opening the petroleum reserve for leasing.

Next December the Bureau of Land Management expects to hold the largest onshore lease sale in history, beginning with two million acres within the reserve.

Last November, after four years of argument, Congress passed the Alaska National Interest Lands Conservation Act. It designated more than 104 million acres of Federal lands in Alaska as national parks, wildlife refuges and national conservation areas.

This bill cleared the way for accelerating the conveyance of 48.3 million acres of other Federal lands to the State of Alaska and 36.8 million additional acres to corporations formed by Alaskan natives.

The Alaska lands measure added 43.6 million acres to the national park system in Alaska, including large new parks in the Wrangall Mountains in the southeastern Alaska sector, in the Lake Clark area west of here and in the gates of the Arctic and Noatak regions, which border the petroleum reserve on the south.

But there were no immediate plans by the National Park Service to begin building access roads or any other facilities into the new parks.

Earlier this month Interior Secretary James G. Watt said there would be no additional money coming into Alaska for the National Park Service.

"We're going to put money first and foremost into the developed parks to salvage what is there rather than opening up new areas that have just been added to the system," Mr. Watt told a group of national park concessioners.

The activities of the United States Geological Survey in the national petroleum reserve, which is outside the protected Federal lands, will be supplemented by three private oil exploration companies that will eventually conduct all other oil searches in the reserve.

At least 5.8 million acres in the reserve have oil and gas potential, Curt McVee, veteran director of Bureau of Land Management operations in Alaska, said recently.

Opening of Pipeline Road

The agency was also hoping to provide public access this June to another long section of the road that borders the Trans-Alaska Pipeline. This would enable motorists from Fairbanks to drive for 260 miles through some magnificent mountain area northward to the pipeline construction camp at Dietrich, 200 miles south of Prudhoe Bay.

Another activity of highest priority is the completion of land transfers and trades with the state and the native corporations, Mr. McVee said.

The Bureau of Land Management is also beginning a wilderness and oil appraisal of the central Arctic Management Area, the four million acre region between the Prudhoe Bay oil fields and the Arctic Wildlife Range, as well as a study of other large areas of the bureau's Federal lands south of the 68th Parallel.

Falkland Islands Dependencies

Plants are featured on six stamps released Feb. 5 by Falkland Islands Dependencies.

LINN'S STAMP NEWS

The characteristics of Antarctic land life are the antithesis of land life in the tropics, where plants and animals are large, exotic and abundant.

The only animal form native to the Antarctic land mass is a species of wingless fly. It is only in the sheltered places of the northern part of the Antarctic Peninsula that several flowering plants, two species of grass and a pearlwort can survive.

The climate of the islands which constitute the Falkland Islands Dependencies is intermediate between that of Antarctica and the sub-Antarctic islands.

South Georgia, Britain's oldest Antarctic possession, lying 800 miles southeast of the Falkland Islands, has a cold damp climate, with summer temperatures averaging only about 5°c. It is plagued by mists and strong winds as well.

The island is 100 miles in length and 20 miles wide, and consists principally of a chain of snow-covered mountains, of which the highest is Mount Paget (9,625 feet).

The intervening valleys are filled with glaciers, which in some places reach down to the sea. Tussock grass grows in the swampy ground near the shore, beyond which is a tundra-like region with various grasses, burnets, tiny flowering buttercups and bedstraw.

Elsewhere grows mosses and lichens. Seaweed or kelp is abundant on the beaches.

There are a few species of insect life, and the coasts are inhabited by birds and seals.

Capt. Cook, on his famous second voyage in search of an Antarctic continent, claimed South Georgia for Britain in 1775. His opinion of it was hardly flattering:

"Land doomed by Nature to perpetual frigidness, where not a tree was to be seen, nor a shrub high enough to make a toothpick."

The South Sandwich Islands, which constitute the remainder of the Falkland Islands Dependencies, form the eastern section of the volcanic Scotia Arc.

The southern islands — Vindication, Candlemas, Saunders, Montague, Bristol and Southern Thule — were discovered by Capt. Cook.

As their names suggest, Zavodovski, Visokoi and Leskov Islands were discovered by a Russian expedition under Capt. Thaddens Von Bellingshausen in 1819.

Some of the volcanoes are still active and it is only in the region of their warm fumaroles that green mats of mosses and liverworts are able to thrive.

Most of the remainder of the island is barren. Antarctic hair grass is found on Candlemas Island.

The plants featured on the designs are as follows:

Magellanic club moss (Lycopodium magellanicum) 3 pence. The club mosses (Lycopodiinae) are distributed throughout the world but avoid the most arid zones. All species are herbaceous and most have procumbent, richly forking stems. The leaves are small, needle-shaped and sometimes, scale-like.

Alpine cattail (Phleum alpinum) 6p. This plant is a member of a widespread grass family related to the fox-tail.

Greater burnet (Acaena magellanica) 7p. The burnets are a member of the Rosaceae (rose family).

Brown rush (Rostkovia magellanica) 15p. Rushes differ from grasses in manner of their pollination, their consequent simplification of flowers, their structure of seed and the formation of a starchy endosperm.

Antarctic hair grass (Deschampsia antarctica) 25p. This grass was the first flowering plant described in the Antarctic by Hooker, when he accompanied Ross's expedition in 1837.

The new U.S. stamp booklet featuring 10 different wild animals native to the United States will be issued May 14 at Boise, Idaho.

The booklet — intended for over-the-counter sales — will contain two panes of ten 18¢ stamps each, meeting the basic first-class rate. The entire booklet will sell for $3.60.

Each pane will include 10 different Wildlife designs; this is the first time that a U.S. booklet pane has featured 10 different designs. The stamps will be identical in size to the 1980 Windmill booklet stamps.

The five stamps on the left vertical row of each pane feature (in descending order): a bighorned sheep; a harbor seal; a brown bear; an elk (Wapiti); and a white-tailed deer.

Featured in the right vertical row (from top to bottom) are: a puma; a bison; a polar bear; a moose (American elk); and a pronghorned antelope.

Polar Sea Pulls Free of Ice

Associated Press June 1

Seattle — The bearded captain of the Seattle-based U.S. Coast Guard icebreaker Polar Sea found himself in a harsh predicament this winter but he sounds like he actually enjoyed it.

That's because he regards himself as one of the world's last pioneers.

John Dirschel, 50, spent nearly three months surrounded By ice in the Arctic.

"What it boils down to is probably that everything on the shore that is exploitable has been exploited," he said.

"What you're looking at with the Arctic regions and probably the Antarctic in time is that these are the last regions where exploitation is still possible."

The icebreaker returned May 23 to its Seattle home port.

Part of the Polar Sea's mission was to conduct scientific experiments. The voyage itself was an exploration, a pioneering effort that could pave a route for oil tankers through some of the planet's most hostile environments.

The Polar Sea became the first ship ever to reach Point Barrow in the dead of winter.

But its propeller and rudder became damaged. The vessel became stuck in the ice.

". . . don't ever sell the Arctic ice short," Dirschel said. "If you run into a piece of multi-year (ice) with thickness to it and enough head to it, it's going to deflect the ship or stop it.

"That's because when you start playing hell because you've got to get it moving again and you've got to get it back on heading again."

He said the fact the Polar Sea did become stuck could lead to improvements in the technology and more kndge of how much a ship can take.

"I know that with what I learned on this last winter's trip that if I had to do it again I could probably do it more efficiently the next time around," he said.

"By the time I had done it three or four times, I'd probably have it psyched out pretty well."

On Alaska's North Slope, "exploitation" — the Polar Sea skipper's word — has meant oil.

Oil was in large part the reason for this winter's Polar Sea voyage.

The Coast Guard says major oil companies kicked in a big chunk of the cost of the mission, about $200,000 in Dirschel's estimate. He said the oil money came through an organization called the Alaska Oil and Gas Association.

He was asked if this winter's research justified the money spent for it.

"That's the kind of question you can only answer with more questions," Dirschel replied. "Do we want to be oil independent? Do we want to be in a position where we are sufficient unto ourselves?"

Need for more Arctic research to be studied

The Anchorage Times

Washington — Alaska Sens. Ted Stevens and Frank Murkowski laid the groundwork today for a task force of federal, state and native representatives to consider the need for more Arctic research.

Stevens and Murkowski met today with representatives of the National Science Foundation, the Smithsonian Institution, the American Petroleum Institute, North Slope natives, and the Departments of Interior, Defense and Commerce to discuss the issue.

They agreed to set up a task force under the joint direction of the Interior and Commerce departments.

The group will determine "if we need further Arctic research," Stevens said. "If we do, then we go to the administration, the private sector and the state to try to put together a funding package for the Naval Arctic Research lab in Barrow."

The lab has been virtually closed, and Murkowski suggested earlier this week that the Coast Guard or another agency take over the caretaker operation. May 1

* * * *

Alaska's most mysterious bear lives at the edge of the arctic ice. The polar bear is a creature supremely suited to his environment. Stubby body, large size, short ears and snout all add up to an efficient solution to the problem of retaining body heat. Even the bear's paws are furred. A thick coat of guard hairs covers the polar bear's dense fur. The white color of the fur is somewhat deceiving. It absorbs solar energy in a spectrum that humans can't see. If we could, the bear would be black.

Polar bears mostly hunt seals by cunning and stealth. They have been seen to lie flat on the ice and cover their sensitive black noses with a paw after spotting a sleeping seal. Very slowly they advance toward the prey, timing their movements to the seal's quick naps. A bear will work on a seal for hours, covering hundreds of yards of ice inches at a time. Then comes the sudden explosion so characteristic of the great bears; a ferocious lunge covering the last few yards with the speed of a thoroughbred. A roundhouse swipe of the paw with enough strength to break a cow's back and dinner, sometimes, is served.

The white bears know absolutely no fear, except of killer whales. They can swim for hours without tiring and cover hundreds of miles without food or rest in quest of some unknown destination.

Polar Star is arctic-bound

Associated Press

Seattle, Wash. — The Coast Guard icebreaker Polar Star is scheduled to embark Saturday from Seattle for its summer arctic patrol.

The Polar Star will conduct wildlife studies in the Arctic Ocean, said spokeswoman Brenda Flint. Eight scientists from the University of Alaska will be aboard to study the life habits of the walrus, she said.

The Seattle-based icebreaker will also retrieve four data buoys that have collected information on water currents and ice floe.

She said the Polar Star is scheduled to return to Seattle in late August. June 18

Standards developed for Arctic

The Anchorage Times

Washington — The U.S. Geological Survey has published orders regulating the exploration, development and production of oil and gas in the Arctic regions of the Outer Continental Shelf (OCS) to take into account the special environmental conditions of that region.

The orders require all fixed and mobile drilling units to be capable of withstanding the oceanographic conditions of the Beaufort Sea, Chukchi Sea and Hope Basin where they will be used.

They also spell out standards for selection of equipment materials, casing and cement that can be used safely in a permafrost environment. The Arctic area OCS orders were developed following a review by USGS of the special environmental conditions in the region and a study of similar requirements for other offshore drilling operations.

Older whales keep young out of trouble

Associated Press June 24

Seattle — Young whales frolicking in protected South American waters sometimes get so playful their mothers have to slow them down, a noted zoologist observes.

Nursing mother whales pay the price of their offspring's energetic actions because the mothers don't eat during their five-month journey from feeding grounds in the Antarctic to the gulf about 600 miles south of Buenos Aires, said Dr. Roger Payne of the New York Zoological Society.

The calves continue to nurse during the trip, of course, and they eat more the more active they are.

"You can understand why the mothers are interested in cutting down the energy expenditure of their calves," Payne said during a recent lecture at the Pacific Science Center. "Calves love to play with each other, but their mothers intervene. They swim between the calves until they get them to stop playing."

Whales arrive promptly every year at a place called Peninsula Valdes, set aside by the Argentine government as a whale sanctuary, Payne said.

Peninsula Valdes is one of several warm-water areas where right whales of the Southern Hemisphere gather annually for breeding and birthing.

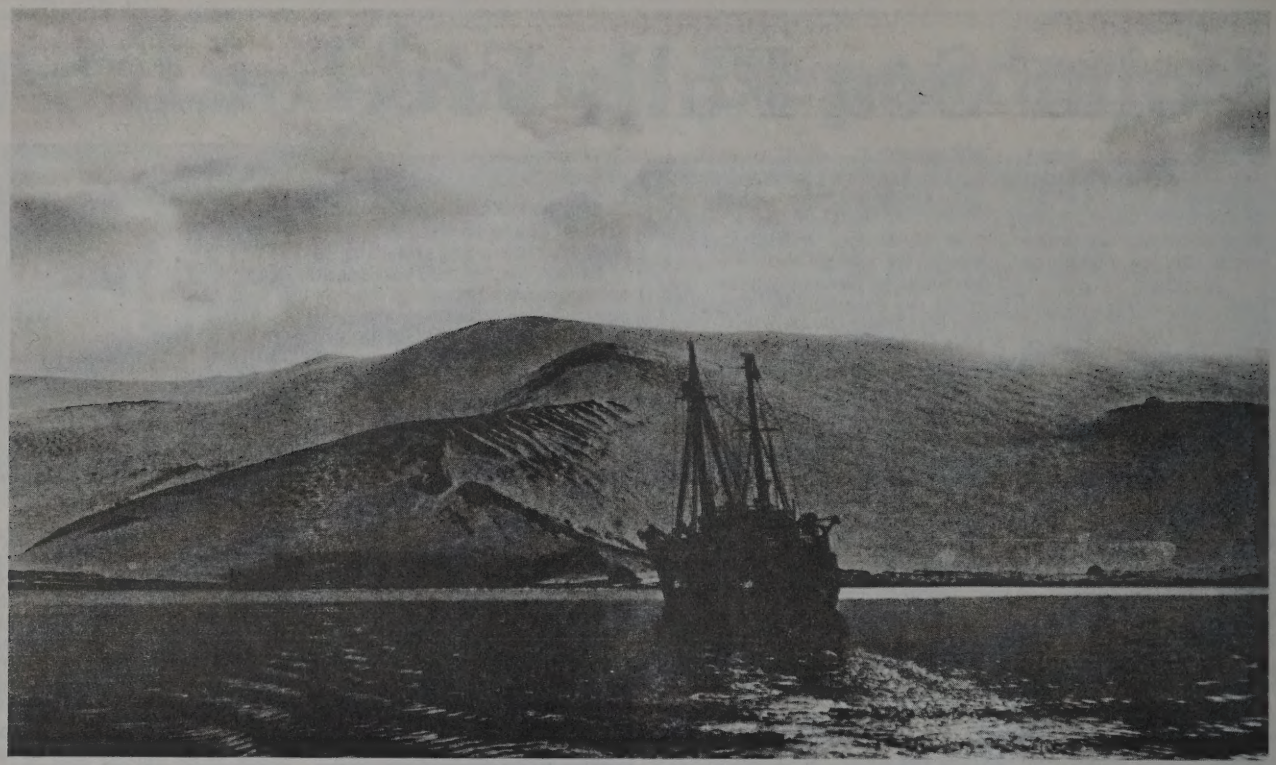
Right whales were given the name by whalers who considered them the "right" kind because they floated when they were killed and had the whalebone in demand for such things as umbrella and corset stays during the 1700s and 1800s.

"You get the impression that (the whales) are bored stiff and are always looking for something to play with," Payne said.

The scientist said he was fascinated at how the whales sailed with the wind. At first, the researchers couldn't believe the whales were sailing intentionally as they lifted their huge tails out of the water, moving slowly and majestically with the breeze.

"They sail, head hanging down, until they hit bottom and then they'll swim back upwind and do it again," Payne said.

Glaciers contain enough fresh water to raise sea levels all around the world by 200 feet.



U.S. Navy photo by William R. Curtsinger

The R/V *Hero*, used by the U.S. Antarctic Research Program for marine and coastal studies, cruises along the coast of the Antarctic Peninsula. After a 5-month overhaul in the United States, the research vessel returned to service in November 1980.

Bearing the paint scraped signs of its battle with the Arctic ice, ***Polar Sea*** *takes a work break for its party of scientists to make their measurements.*